# R O M A N I A

Astronomical Institute of the Romanian Academy

**Institute of Geodynamics of the Romanian Academy**

Institute of Space Science

**Solar phenomena:**
-CMEs and solar quakes
-HSS

**Solar-terrestrial interaction**:
-space climate – long-term (at Hale and Gleissberg cycles timescales) variations in solar, heliospheric and magnetospheric parameters;
-response of the Earth's magnetosphere-ionosphere system to solar wind disturbances;
-space weather and associated hazard;
-solar/geomagnetic activity effects on climate.

**COST ES0803 - Developing Space Weather Products and Services in Europe**

**Balkan, Black Sea and Caspian Sea Regional Network for Space Weather Studies**

**COST ES1005 - Towards a more complete assessment of the impact of solar variability on the Earth's climate**

# CME, solar flares with seismic radiation

- Catalog of historic CME events associated with solar flares that have produced major geomagnetic storms
- Selected 25 major geomagnetic storms between 1996-2008 that have reached the Earth as complex phenomena
- Correlation between various parameters has been studied
- Determination of the propagation and real speed of CME associated with solar flares using STEREO data.
- Developing an empirical model for improving the prognosis of the arrival time of a CME associated with solar flares to Earth

**Only 3 out of the 57 CMEs have been correlated with sunquakes suggesting the fact that there is no correlation between the CME that produced major geomagnetic storms and sunquakes.**

**An empirical model of time arrival of the CME on Earth prediction taking into consideration the interplanetary conditions**

# HSS and ASS_GS Catalogues

- Maris G. and Maris O., 2012, *High speed streams in the solar wind during the 23rd solar cycle,* in: Advances in Solar and Solar-Terrestrial Physics, Editors: Maris G. and Demetrescu, C, Chapter 7, Published by Research Signpost, T.C. 37/661(2), Fort P.O., Trivandrum-695 023, Kerala, India, ISBN 978-81-308-0483-5, pp. 97-134;
- **Maris, O., Maris G., 2009: www.spacescience.ro/new1/HSS_Catalogue.html;**

  **http://www.spaceweather.eu/, in Cap. "Data Catalogs for SW"**
- **www.spacescience.ro/new1/HSS_Catalogue.html**